

**CLAIMS**

WHAT IS CLAIMED IS:

1. A stator coil system, comprising:  
an upper half-diamond coil with first and second machined tips;  
a lower half-diamond coil with third and fourth machined tips;  
a first mechanical-electrical connector adapted to receive the first and third machined tips from said upper and lower half-diamond coils and mechanically and electrically interconnect the upper and lower half-diamond coils; and  
a second mechanical-electrical connector adapted to receive the second and fourth machined tips from said upper and lower half-diamond coils and mechanically and electrically interconnect the upper and lower half-diamond coils.
2. The stator coil system of Claim 1, wherein said upper and lower half-diamond coils include a plurality of conductor pairs, each conductor pair being at a different potential.
3. The stator coil system of Claim 2, wherein the number of said coil pairs is four.
4. The stator coil system of Claim 2, wherein said first and second mechanical-electrical connectors include a plurality of conductive sections separated by

at least one dielectric layer, said conductive sections connected to each other through a strap conductor.

5. The stator coil system of Claim 2, wherein said first mechanical-electrical connector includes a first bolt running therethrough and said second mechanical-electrical connector includes a second bolt running therethrough.

6. The stator coil system of Claim 5, wherein said first and third machined tips are aligned and adapted to receive said first bolt, and said second and fourth machined tips are aligned and adapted to receive said second bolt.

7. The stator coil system of Claim 4, wherein the first mechanical-electrical connector includes eight conductor sections which are interconnected through three conductive straps and an inner conductive block.

8. The stator coil system of Claim 7, wherein the second mechanical-electrical connector includes seven conductor sections which are interconnected through three conductive straps and an inner conductive block.

9. The stator coil system of Claim 8, wherein said second mechanical-electrical connector includes a phase lead.

10. The stator coil system of Claim 9, further comprising:

a first rubber boot encasing said first connector; and

a second rubber boot encasing said second connector.

11. The stator coil system of Claim 10, wherein said first and second rubber boots are filled with a dielectric paste.

12. The stator coil system of Claim 8, wherein said conductive straps are connected in a Roebel transposition orientation.

13. The stator coil system of Claim 12, wherein said first and second mechanical-electrical connectors include first and second Bellville washers and self-locking nuts, respectively.

14. A mechanical-electrical connector for interconnecting successive coil loops of a sectioned stator, comprising:

a first conductive layer;

a first dielectric layer below said first conductive layer;

a second conductive layer below said first dielectric layer;

a third conductive layer;

a second dielectric layer below said third conductive layer;

a fourth conductive layer below said second dielectric layer;

an inner conductor electrically joining said second and third conductive layers;

an outer conductive jumper electrically joining said first and fourth conductive layers; and

a bolt running through each of said conductive layers, dielectric layers and inner conductor to secure said layers together.

15. The mechanical-electrical connector of Claim 14, wherein each of said dielectric layers is larger than each of said conductive layers to prevent creep.

16. The mechanical-electrical connector of Claim 14, wherein each of said four conductive layers includes a groove machined therein adapted to accept a conductive tip from an external source.

17. The mechanical-electrical connector of Claim 16, further comprising:

a phase lead connected to said first conductive layer.

18. The mechanical-electrical connector of Claim 17, further comprising:

an insulating tube around said bolt to insulate said bolt from said conductive layers.

19. The mechanical-electrical connector of Claim 18, further comprising:

an insulating boot formed around said bolt and conductive layers.

20. The mechanical-electrical connector of Claim 19, wherein said dielectric layers are made from G-10.